

### **REMARKS**

Claims 1, 9, 13, 19 and 21-36 are pending. The support for the claim amendments are in the published specification as follows: Claims 1, 9, 19 and 21: [0067], [0076], [0083], [0104]; Claims 19 and 27: [0021]; and Claims 31, 32 and 34: grammatical. No new matter is added.

#### ***Declaration***

As for the Declaration, on page 2, the typographical error in number of the reference to Japanese unexamined patent publication has been corrected to read No.JP2002- 302795, as helpfully suggested by the Examiner.

In addition, on page 8, Table 7 indicating the values of Evaluation of the vertical tension strength obtained by  $\text{Kgf}/0.8\text{cm}^2$  which is the unit of the vertical tensile strength has been corrected to be  $\text{Kgf}/\text{cm}^2$ . Because the unit of the tensile strength from between 20Kgf to at least 50Kgf is recited in the Claims and carried out according to the present application as  $\text{Kgf}/\text{cm}^2$ .

Further, On page 7, the second line in (5) Tension test: of the amended Declaration, the unit "0.8 cm<sup>2</sup>" has been amended to read "1 cm<sup>2</sup>" .

In amended Table 7, the values of the vertical tension strength of the composite samples of the present invention are within the scope of between from 20Kgf/cm<sup>2</sup> to at least 50Kgf/cm<sup>2</sup> as recited in Claims of the present application.

**Claims 1, 9, 13, 19 and 21-36 are rejected under 35 U.S.C. 103(a) as being obvious over Minoda (JP 2002-302795; which is cited by Applicant on PTOL-1449).** (Office Action, page 7)

In response to the rejection, the applicants would like to explain the following differences:

The tensile strength carried out by the present invention means the vertical tensile strength as clear from the paragraph [0083] in the publication of the present

application. Meanwhile, the tensile strength disclosed in Minoda, JP2002-302795 (JP' 795), is carried out by the horizontal tensile strength, as described in the paragraph [0034] and shown in FIG. 3.

In order to compare the tensile strength of the composite of the claimed invention according to the present application and that of the composite disclosed in Minoda'795 completely, the vertical tensile strength and the horizontal tensile strength of both of the claimed composite and the composite of Minoda'795 are measured respectively.

As a result, there is obtained that both of the vertical tensile strength and the horizontal tensile strength of the composite brought about by the claimed invention of the present invention are much superior to both of those of the composite brought about by Minoda'795 invention (see Revised Declaration).

Claims 1 and 9 are neither obvious over, nor anticipated by Minoda' 795 for the following additional reasons, among others:

One of the characteristic feature elements in Claims 1 and 9 each is such that the diameter of the innumerable pores made on the anodic oxidation coating is from between 25 nm to about 90 nm.

By contrast, *Minoda'795 is negative in making the diameter of the pores less than 200 nm* from the recognition describing that if the open diameter W of the holes 4 is less than 200 nm, a laminating synthetic resin material such a resin, or the like fluidizing at the time of thermal adhesion is difficult to flow into the holes and the fine pores 5 made inside the holes and, as a result, it becomes difficult to exhibit a sufficient anchor effect,..." (See paragraph [0018] in JP' 795 reference.)

From this fact alone, the conclusion that such a characteristic feature that limit the diameter of the pores from between 25 nm to about 90 nm is obvious over or anticipated by Minoda '795 is not logically grounded.

As clear from the Table 4 and Table 7 in the Revised Declaration, the composite as recited in Claim 1 including the above characteristic feature is superior to that

disclosed in Minoda JP' 795 in both of the horizontal tensile strength and the vertical tensile strength.

In conclusion, Claims 1 and 9 are not obvious for the above-mentioned reasons and accordingly Claim 13, 19 and 21-36 depending on Claims 1 and 9 are also not obvious.

The invention now claimed is clearly structurally different from the disclosure of Minoda. It is therefore respectfully requested that the rejection be reconsidered and withdrawn.

**Claims 1, 9, 13, 19 and 21-36 are rejected under 35 U.S.C. 103(a) as being obvious over Iwasaki et al. (US 2002/0109134) in view of Minoda (JP 2002-302795; which is cited by Applicant on PTOL-1449). (Office Action, page 9)**

The combination of references cannot make obvious the invention now claimed for several reasons, including:

(1) Iwasaki primarily concerns the nanostructure of porous aluminum and *not a composite material*.

(2) In Iwasaki, plural kinds of pores are at least two kinds of pores 3 and 5 having different diameters, and pores 5 have a smaller diameter than that of the pores 3, and further the pores 5 and pores 3 are *regularly formed at predetermined positions* in the anodic porous alumina. Thus, the structure of the anodic oxidation coating of the invention as recited in claim 1 is clearly structurally different from that of the nanostructure disclosed in Iwasaki et al.

(3) Further, according to the invention as recited in claim 1, the *innumerable* pores of the anodic oxidation coating can be formed *irregularly only by a single anodizing treatment*. In contrast, Iwasaki prepares the nanostructure having plural kinds of pores regularly formed by the three or four steps, thus the pores produced are not innumerable.

(4) Finally, since the diameter range of the pores as recited in Claim 1 of the present invention is negated by Minoda' 795 as mentioned above, the rejection of Claim 1 as being obvious over Iwasaki et al. in view of Minoda has no logical basis.

In conclusion, Iwasaki and Minoda are entirely independent and different from each other in purpose and structure.

It is respectfully requested that the rejection be reconsidered and withdrawn.

**Claims 1, 9, 13, 19 and 21-36 are rejected under 35 U.S.C. 103(a) as being obvious over Burnham (US 2,647,079).** (Office Action, page 11)

The claimed invention now recites resins, polybutylene terephthalate (PBT), polyethylene (PE), polypropylene (PP), ABS, PPS and polyacetal (POM), nowhere disclosed or suggested by Burnham.

In addition, the selected resin has an elastic modulus which is able to absorb the linear expansion between them, a water resisting property and a chemical resisting property (see paragraph [0076]). Such a selected resin is neither obvious over, nor anticipated by Burnham.

In addition, Burnham is not taken interest in the diameter size of the pores of the porous aluminum oxide film, and therefore such a technical thought that the diameter size of the pores has to be set in the range of between 25 nm and about 90 nm, as recited in Claim 1, for obtaining the foregoing strong horizontal and vertical tensile strength which cannot be obvious in light of Burham.

Thus Burnham, alone, cannot logically create a *prima facie* rejection of obviousness. It is respectfully requested that the rejection be reconsidered and withdrawn.

In view of the above amendment, applicant believes the pending application is in condition for allowance. The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

Dated: November 24, 2009

Respectfully submitted,  
Electronic signature: /James E. Armstrong, IV/  
James E. Armstrong IV

Customer No. 21874

Registration No.: 42,266  
EDWARDS ANGELL PALMER & DODGE  
LLP  
P.O. Box 55874  
Boston, Massachusetts 02205  
(202) 478-7375  
Attorneys/Agents For Applicant

Encls: Revised Declaration (9 pages)